

WHAT IS CLAIMED IS:

1. A light diffusing plate comprising:
an unrecognizable structure which has an optical refractive power;
passing areas through which a collimated light incident from a side of the unrecognizable structure passes; and
a non-passing area other than said passing areas, which has relatively low light transmissivity compared with the passing areas;
wherein materials of said passing areas and non-passing area are applied simultaneously.
2. The light diffusing plate according to claim 1, wherein the light diffusing plate comprises a light transmitting support and a diffusing layer formed on said light transmitting support by fixing light transmitting spheres which constitute said passing areas to the light transmitting support with a light absorptive binder which constitutes said non-passing area.
3. A light diffusing plate, comprising:
a light transmitting support;
a diffusing layer having light transmitting spheres; and

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a light-sensitive thermal developing material layer which is formed between said light transmitting support and the diffusing layer;

wherein said light-sensitive thermal developing material layer contains a light-sensitive thermal developing material which forms no color in an exposed areas; and

wherein said light-sensitive thermal developing material is heated to form a color after nearly collimated light is incident from said diffusing layer side.

4. A light diffusing plate comprising:

a light transmitting support;

a diffusing layer having light transmitting spheres; and

a thermal ablative layer formed between said light transmitting support and the diffusing layer;

wherein the thermal ablative layer which contains a light absorptive thermal ablative material; and

wherein said thermal ablative material in an area which is illuminated by a nearly collimated light incident from a side of said diffusing layer is removed by thermal energy by means of the nearly collimated light.

5. A light diffusing plate comprising:

a light transmitting support;

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a diffusing layer containing light transmitting spheres;
and

a contacting material which contacts said light
transmitting spheres;

wherein said contacting material contains a light-
sensitive material which forms no color in an exposed area and
a light absorptive material; and

wherein said light-sensitive material is heated and
developed to form a color after nearly collimated light is
incident from a side of said diffusing layer.

6. A light diffusing plate comprising:

a light transmitting support;

a diffusing layer containing light transmitting spheres;

a contacting material which contacts said light
transmitting spheres and contains a light absorptive material;
and

a light-sensitive material which forms no color in an
exposed area and is provided between said contacting material
and said light transmitting support;

wherein said light-sensitive material is heated and
developed to form a color after nearly collimated light is
incident from a side of said diffusing layer.

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7. The light diffusing plate according to claim 3, wherein said diffusing layer is formed by forming a layer of said contacting material previously and then embedding said light transmitting spheres into the layer of the contacting material.

8. The light diffusing plate according to claim 4, wherein said diffusing layer is formed by forming a layer of said contacting material previously and then embedding said light transmitting spheres into the layer of the contacting material.

9. The light diffusing plate according to claim 5, wherein said diffusing layer is formed by forming a layer of said contacting material previously and then embedding said light transmitting spheres into the layer of the contacting material.

10. The light diffusing plate according to claim 6, wherein said diffusing layer is formed by forming a layer of said contacting material previously and then embedding said light transmitting spheres into the layer of the contacting material.

11. The light diffusing plate according to claim 2, wherein a surface of an opposite side to said diffusing layer in said light transmitting support is treated with light non-reflection processing.

12. The light diffusing plate according to claim 3, wherein a surface of an opposite side to said diffusing layer in said light transmitting support is treated with light non-reflection processing.

13. The light diffusing plate according to claim 4, wherein a surface of an opposite side to said diffusing layer in said light transmitting support is treated with light non-reflection processing.

14. The light diffusing plate according to claim 5, wherein a surface of an opposite side to said diffusing layer in said light transmitting support is treated with light non-reflection processing.

15. The light diffusing plate according to claim 6, wherein a surface of an opposite side to said diffusing layer in said light transmitting support is treated with light non-reflection processing.

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a light diffusing plate which is located in an opposite side of said backlight unit against said liquid crystal display panel;

wherein said light diffusing plate comprises a light transmitting support, a diffusing layer having light transmitting spheres, and a thermal ablative layer formed between said light transmitting support and the diffusing layer;

wherein the thermal ablative layer which contains a light absorptive thermal ablative material; and

wherein said thermal ablative material in an area which is illuminated by a nearly collimated light incident from a side of said diffusing layer is removed by thermal energy by means of the nearly collimated light.

19. A display apparatus comprising:

a liquid crystal display panel;

a backlight unit which forces a collimated light to be incident on said liquid crystal display panel; and

a light diffusing plate which is located in an opposite side of said backlight unit against said liquid crystal display panel;

wherein said light diffusing plate comprises a light transmitting support, a diffusing layer containing a light transmitting spheres, and a contacting material which contacts said light transmitting spheres;

wherein said contacting material contains a light-sensitive material which forms no color in an exposed area and a light absorptive material; and

wherein said light-sensitive material is heated and developed to form a color after nearly collimated light is incident from a side of said diffusing layer.

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20. A display apparatus comprising:

a liquid crystal display panel;

a backlight unit which forces a collimated light to be incident on said liquid crystal display panel; and

a light diffusing plate which is located in an opposite side of said backlight unit against said liquid crystal display panel;

wherein said light diffusing plate comprises a light transmitting support, a diffusing layer containing light transmitting spheres, a contacting material which contacts said light transmitting spheres and contains a light absorptive material, and a light-sensitive material which forms no color in an exposed area and is provided between said contacting material and said light transmitting support; and

wherein said light-sensitive material is heated and developed to form a color after nearly collimated light is incident from a side of said diffusing layer.

21. An image display apparatus comprising:

an image display device having a matrix structure; and

a light diffusing plate comprising:

an unrecognizable structure which has an optical refractive power;

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passing areas through which a collimated light incident from a side of the unrecognizable structure passes; and

a non-passing area other than said passing areas, which has relatively low light transmissivity compared with the passing areas,

wherein materials of said passing areas and non-passing area are applied simultaneously, and

wherein said light diffusing plate is provided on a viewing side of a display screen of said image display device.

22. The image display apparatus according to claim 21, wherein said light diffusing plate comprises a light transmitting support and a diffusing layer formed by fixing light transmitting spheres with a binder on the light transmitting support.

23. The image display apparatus according to claim 21, further comprising a preventing sheet for preventing from scattering an extraneous light;

wherein said preventing sheet is provided on the light diffusing plate which was provided on said viewing side of said display screen.

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24. An image display apparatus comprising:
an image display device having a matrix structure; and
a light diffusing plate comprising an unrecognizable
structure which has an optical refractive power;
wherein said light diffusing plate is provided on a viewing
side of a display screen of said image display device.

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25. The image display apparatus according to claim 24,
wherein said light diffusing plate comprises a light
transmitting support and a diffusing layer formed by fixing
light transmitting spheres with a binder on the light
transmitting support.

26. The image display apparatus according to claim 25,
further comprising a preventing sheet for preventing from
scattering an extraneous light;

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wherein said preventing sheet is provided on the light
diffusing plate which was provided on said viewing side of said
display screen.

27. The display apparatus according to claim 16, further
comprising a preventing sheet for preventing from scattering
an extraneous light;

28. The display apparatus according to claim 17, further comprising a preventing sheet for preventing from scattering an extraneous light;

29. The display apparatus according to claim 18, further comprising a preventing sheet for preventing from scattering an extraneous light;

30. The display apparatus according to claim 19, further comprising a preventing sheet for preventing from scattering an extraneous light;

wherein said preventing sheet is provided on the light diffusing plate which was provided on a viewing side of a display screen of said liquid crystal display panel.

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31. The display apparatus according to claim 20, further comprising a preventing sheet for preventing from scattering an extraneous light;

wherein said preventing sheet is provided on the light diffusing plate which was provided on a viewing side of a display screen of said liquid crystal display panel.

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